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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/701,095	11/22/2000	Toyotaro Tokimoto	TOKIMOTO ET AL PCT	6201

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EXAMINER

BRIER, JEFFERY A

ART UNIT PAPER NUMBER

2628

DATE MAILED: 07/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/701,095	<b>Applicant(s)</b> TOKIMOTO ET AL.	
	<b>Examiner</b> Jeffery A. Brier	<b>Art Unit</b> 2628	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 April 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-8, 14 and 15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-4, 6-8, 14 and 15 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/19/2006 has been entered.

### ***Response to Amendment***

2. The amendment filed on 4/19/2006 has been entered.

### ***Response to Arguments***

3. Applicants remarks filed on 4/19/2006 have been fully considered and in view of the amendments made to the claims the 35 USC 112 first and second paragraph issues set forth in the 1/19/2006 Final Rejection have been overcome.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 2-4, 6, 7, 14, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Tokimoto et al. EP 0 869 468 A2.

Even though applicant amended the independent claim to limit each pixel of said display screen section consisting of one of said first color lamps, said second color lamps, and said third color lamps these claims are taught by Tokimoto because each lamp 3 of Tokimoto is actually composed of three LED lamps each of which corresponds to applicants claimed pixel. These claims need to be amended to differentiate these claims from Tokimoto. One way would be to add the limitations of dependent claim 5 into each independent claim. It is also noted the specification defines the pixel lamps on page 3 paragraph numbered (2) as:

( 2 ) A large number of pixel lamps are evenly arrayed in a regular pattern to constitute a display screen , the pixel lamps being three kinds of color lamps which are a first color lamp , a second color lamp and a third color lamp, and these three kinds of pixel lamps being evenly dispersed on the display screen .

and defines the pixel lamps on page 22 lines 7-18 as:

When pixel lamps of each color of RGB (LED chip for example) are lined-up as densely as possible to constitute a display screen having a high resolution, the constitution will ultimately be such in which: a large number of pixel lamps are evenly arrayed on the screen in a regular pattern; there are three kinds of pixel lamps, which are a first color lamp, a second color lamp and a third color lamp; and the three kinds of pixel lamps are evenly dispersed on the screen, as exemplified in Fig. 1, Fig. 3 and Fig . 4. This constitution can be said to be a configuration wherein no useless space is included among the lamps, and such a configuration is one source of the effect of the present invention for realizing a high-resolution display.

It is noted this limitation is not claimed and in Tokimoto the pixel lamps 3 are evenly dispersed, however, each of the red, green, and blue LEDs appear not to be evenly dispersed relative to each other and relative to adjacent red, green, and blue LEDs of adjacent lamps 3. However, such a limitation is suggested individually by Chiang, Phan, and Messing et al. A detailed analysis of the claim follows.

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Claim 14:

Tokimoto teaches a method of displaying image data on a display apparatus, said display apparatus having:

(A) a display screen section provided with a plurality of first color lamps, a plurality of second color lamps, and a plurality of third color lamps (*Column 3 lines 50-55.*), each pixel of said display screen section consisting of one of said first color lamps, said second color lamps, and said third color lamps (*Applicant uses the term pixel ,however, applicant could have equally have used the term subpixel since each LED lamp is one color and three adjacent LED lamps are each of one of the three colors red, green, and blue. A sub pixel is one of the three colors red, green, and blue. Thus, the term applicant has used to define a lamp does not distinguish from the red, green and blue LED lamps forming Tokimotos LED lamp 3.*);

(B) an activating circuit section for driving each of said lamps so that they emit light (*See figure 5.*); and

(C) an image data storing section for storing said image data, said image data being made of a plurality of pixel data sets, each said pixel data set including first color data, second color data, and third color data (*See figure 3 main control device 4 and column 5 lines 41-48 and see figure 5 data memory 16 and column 7 lines 10-13.*);

said method comprising:

(1) a correlating step of performing the steps of:

correlating, to each said first color lamp, a first color group that is made up of a predetermined number of pixel data sets among said plurality of pixel data sets in said image data, the position of each said first color lamp corresponding to the position, in said image data, of the first color group correlated to that first color lamp (*Each of Tokimotos embodiments of 4 dot group, 9 dot group and 16 dot group correlates each group to a display LED lamp. Each dot data in each dot group has red, green, and blue color data. The red color data is used to drive the red LED lamp in the LED lamp 3.*);

correlating, to each said second color lamp, a second color group that made up of a predetermined number of pixel data sets among said plurality of pixel data sets in said image data, the position of each said second color lamp corresponding to the position, in said image data, of the second color group correlated to that second color lamp (*Each of Tokimotos embodiments of 4 dot group, 9 dot group and 16 dot group correlates each group to a display LED lamp. Each dot data in each dot group has red, green, and blue color data. The green color data is used to drive the green LED lamp in the LED lamp 3.*); and

correlating, to each said third color lamp, a third color group that is made up of a predetermined number of pixel data sets among said plurality of pixel data sets in said image data, the position of each said third color lamp corresponding to the position, in said image data, of the third color group correlated to that third color lamp (*Each of Tokimotos embodiments of 4 dot group, 9 dot group and 16 dot group correlates each group to a display LED lamp. Each dot data in each dot group has red,*

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*green, and blue color data. The blue color data is used to drive the blue LED lamp in the LED lamp 3.); and*

(2) a selecting and lighting-up step of performing, in synchronization with one another, the steps of:

for each said first color lamp and each said first color group, sequentially selecting a pixel data set from among the pixel data sets of each said first color group, and, each time a pixel data set is selected, sequentially causing the first color lamp correlated to that first color group to light up based on the first color data of the selected pixel data set (*Each of Tokimotos embodiments of 4 dot group, 9 dot group and 16 dot group sequentially selects corresponding color dot data for each color LED lamp in LED lamp 3. The red color data is used to drive the red LED lamp in the LED lamp 3.);*

for each said second color and each said second color group, sequentially selecting a pixel data set from among the pixel data sets of each said second color group, and, each time a pixel data set is selected, sequentially causing the second color lamp correlated to that second color group light up based on the second color data of the selected pixel data set (*Each of Tokimotos embodiments of 4 dot group, 9 dot group and 16 dot group sequentially selects corresponding color dot data for each color LED lamp in LED lamp 3. The green color data is used to drive the green LED lamp in the LED lamp 3.); and*

for each said third color lamp and each said third color group, sequentially selecting a pixel data set from among the pixel data sets of each said third color group,

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and, each time a pixel data set is selected, sequentially causing the third color lamp correlated to that third color group to light up based on the third color data of the selected pixel data set (*Each of Tokimotos embodiments of 4 dot group, 9 dot group and 16 dot group sequentially selects corresponding color dot data for each color LED lamp in LED lamp 3. The blue color data is used to drive the blue LED lamp in the LED lamp 3.*);

wherein, at each timing for causing said lamps to light up, each of said first, second, and third color lamps is caused to emit light based on a different pixel data set (*Each LED color lamp in LED lamp 3 is driven by a respective dot data set that is different because the red LED is driven by red dot data, the green LED is driven by green dot data, and the blue LED is driven by blue dot data.*).

Claim 2:

Tokimoto teaches the method according to claim wherein each of said first, second, and third color groups is made up of a total of four pixel data sets, adjacent each other two rows and two columns as shown in figure 7 and described on column 8 lines 15-22.

Claim 3:

Tokimoto teaches the method according to claim 14, wherein each of said first, second, and third color groups is made up of a total of nine pixel data sets, adjacent each other in three rows and three columns as shown in figure 6 and described on column 7 line 47 to column 8 line 2.



Claim 4:

Tokimoto teaches the method according to claim 14 wherein each of said first, second, and third color groups is made up of a total of sixteen pixel data sets, adjacent each other in four rows and four columns as shown in figure 8 and described on column 8 lines 25-39.

Claim 6:

Tokimoto teaches the method according to claim wherein the groups, of at least one color, having the same color do not overlap one another in said image data as shown in figures 6-8 and taught at column 2 lines 23-34.

Claim 7:

Tokimoto teaches the method according to claim wherein the order for selecting the pixel data sets that belong to each of said first, second, and third groups is the same among all groups as shown in figures 6-8 and taught at column 7 line 45 to column 8 line 39.

Claim 15:

This claim is an apparatus version of method claim 14 and the apparatus features and functional features of this claim have been addressed in the rejection of claim 14, thus, this claim is rejected for the reasons given for claim 14.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tokimoto et al. EP 0 869 468 A2 and in view of Chiang US Patent No. 6,198,467.

Claim 8:

Tokimoto does not teach the method according to claim 14 wherein the order for selecting the pixel data sets that belong to each of said first, second, and third groups is different among adjacent groups.

However, Chiang at column 4 lines 53-65 teaches that for adjacent lines the pixel data sets are different.

It would have been obvious to one of ordinary skill in the art to modify Tokimoto to have the order for selecting the pixel data sets that belong to each of said first, second, and third groups is different among adjacent groups because Chiang at column 4 line 66 to column 5 line 12 teaches this will "reproduce a high-resolution image on a low-resolution LCD, with high fidelity to the original image".

***Allowable Subject Matter***

8. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach or suggest the features of claim 5:

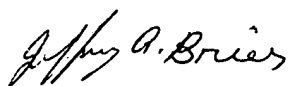
Claim 5 (Previously presented). The method according to claim 14 wherein  
the first color group correlated to one first color lamp partially overlaps the first color group  
correlated to another first color lamp adjacent to said one first color lamp,  
the second color group correlated to one second color lamp partially overlaps the second color  
group correlated to another second color lamp adjacent to said one second color lamp, and  
the third color group correlated to one third color lamp partially overlaps the third color group  
correlated to another third color lamp adjacent to said one third color lamp.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffery A Brier whose telephone number is (571) 272-7656. The examiner can normally be reached on M-F from 7:00 to 3:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi, can be reached at (571) 272-7664. The fax phone Number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Jeffery A. Brier". The signature is fluid and cursive, with the first name "Jeffery" and last name "Brier" clearly distinguishable.

Jeffery A Brier  
Primary Examiner  
Division 2628